

3. Descriptions of the Phytophagous Coleoptera of Japan, obtained by Mr. George Lewis during his Second Journey, from February 1880 to September 1881.—
Part I. By MARTIN JACOBY.

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(Plate XI.)

Our knowledge of the Coleopterous fauna of Japan has during late years greatly increased, on account of many entomologists having visited this country, and the collections which they obtained having been well worked out by specialists. We have valuable monographs and descriptions by Mr. Bates, v. Harold, v. Kiesenwetter, Kraatz, Baly, and others; yet, in spite of the considerable material already obtained, each new collection sent home from Japan seems to prove that many years must yet elapse before we can hope to be thoroughly acquainted with its Coleopterous fauna, since so many new species are continually discovered.

Mr. Bates, in his paper on the Geodephagous Coleoptera obtained by Mr. Lewis during his second journey, has added no less than 118 new species as well as many others not previously known from Japan. To his remarks in regard to this journey as well as to the map accompanying his descriptions, and giving particulars as to Mr. Lewis's route (Trans. Ent. Soc. 1883, iii.), I must here refer.

The Phytophagous Coleoptera of this collection contain, besides those already obtained during Mr. Lewis's first visit to Japan, and described by Mr. Baly, many new forms or species as well as a genus (*Hæmonia*) not formerly recorded from Japan. Here, as in other groups, the relations of Japan to other countries seems to move in the same proportions; that is, we find identical genera and species which are known either from Siberia, India, and China or the Malayan regions, while a certain amount remains proper to Japan.

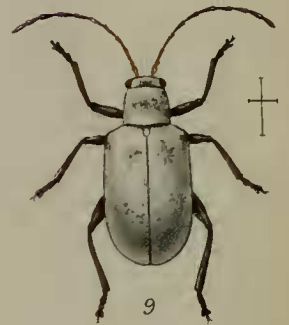
The occurrence in the latter country of such genera as *Chlamys* and *Lamprosoma*, which are almost exclusively confined to South America (of *Chlamys* only 3 species have been described, from India and Malaya, of *Lamprosoma* a single one from Formosa), is certainly interesting; amongst the Phytophaga, however, the greater preponderance seems to be given to Siberian forms as far as we are able to judge at present.

The present paper deals with those genera included to the end of the Chrysomelidæ, while the Halticinæ and Galerucinæ will form the subject of a second communication.

Genus HÆMONIA, Latr.

HÆMONIA JAPANA, n. sp. (Plate XI. fig. 1.)

Below black; above testaceous; head, antennæ, anterior margin, and three longitudinal lines on the thorax black; elytra with five





double rows of black punctures, their apex produced in a spine ; apex of the femora, tibiæ, and tarsi spotted with black.

Length 2 lines.

Head deeply triangularly grooved between the eyes. Antennæ half the length of the body, black ; the second and third joints short, of equal length, fourth slightly longer, the two terminal joints slender and the longest. Thorax subquadrate, nearly as long as broad, the sides straight or slightly concave from before the middle to the base, anterior and posterior margins nearly straight, the space immediately behind the former thickened ; surface impunctate, the anterior margin and three deeply impressed longitudinal grooves on the disk black ; of these, the central one is straight and does not extend to the base, the lateral are oblique and extend to the posterior angles ; a few punctures are also seen in front of the base. Scutellum elongate, black, covered with fine silky pubescence. Elytra slightly depressed below the base, the intervals between the five black double rows of punctures raised, and as broad as the space between each two single rows ; the apex of each elytron truncate and produced at the outer angle in a long testaceous spine ; posterior first tarsal joint as long as the two following ones united ; each joint as well as the extreme apex of the tibiæ and femora spotted with black ; the very long claw-joint also stained with piceous at its apex.

Bukenji, April ; in a pond.

The single specimen obtained by Mr. Lewis of this interesting little *Hæmonia* will enter Lacordaire's second division on account of the long first tarsal joint, and the short and equal second and third joints of the antennæ. The insect is well distinguished by the shining, not opaque thorax, and by the addition of the central black groove on the disk of the latter. By this last character it may be at once separated from *H. equiseti*, to which it seems otherwise closely allied.

Genus DONACIA, Fabr.

DONACIA GRACILIPES, sp. nov.

Elongate, depressed above, narrowed behind, of a metallic bronze colour ; below covered with silvery pubescence. Thorax square-shaped, covered with fine transverse strigæ ; elytra obliquely depressed below the base, strongly punctate-striate, the interstices transversely wrinkled throughout ; posterior femora with a short tooth.

Length 3-4½ lines.

Head less shining, covered with fine pubescence, the space above the antennæ raised in shape of two more or less distinct tubercles ; vertex without longitudinal groove. Antennæ nearly as long as the body, the basal joint metallic, the rest black ; the third and the two following joints of equal length, double as long as the second (in some specimens the fourth joint is slightly longer than the preceding). Thorax square-shaped, the sides constricted near the base, moderately thickened into a kind of callosity near the anterior angles, these latter with a short pointed tubercle, furnished with a

single hair; surface closely, irregularly, and finely transversely wrinkled or rugose throughout; another similar tubercle like the anterior one, also furnished with a single seta, is placed at the posterior angles. Scutellum triangular, pubescent. Elytra distinctly narrowed behind, truncate at the apex, their surface flattened, with a generally distinct oblique depression from the shoulder to the suture, strongly punctate-striate to the apex; the interstices everywhere transversely wrinkled, but more strongly so towards the base. Legs slender, the posterior femora not quite extending to the apex of the elytra and furnished with a short acute tooth.

The female is often much larger and especially broader, being sometimes of double the width of the male, and proportionally more robust; the elytra are also more strongly wrinkled as well as the thorax, and the antennæ slightly shorter.

Junsai.

Of this species many specimens were obtained living on a kind of water-lily, and although closely allied to several European and North-American forms, I am unable to identify it with any of them. The nearest allied amongst the European *Donacias* seems to be *D. aquatica*, L. This species is, however, broader, less elongate and narrowed behind, the colour of the elytra is quite different, and their punctuation much finer and less deep; the basilar oblique depression is also much less distinct. The thirteen specimens before me of *D. gracilipes* show no variation whatever except in size, and the species may be principally known by the nearly square-shaped thorax, and its short, but acutely produced anterior and (to a less extent) posterior angles in connection with the oblique anterior elytral depression, and the slender third and fourth joints of the antennæ.

DONACIA CONSTRICTICOLLIS, sp. nov. (Plate XI. fig. 2.)

Robust, convex, obscure cupreous or brownish æneous; antennæ and legs ferruginous; thorax much narrowed behind, shining and finely punctured; elytra with a basilar depression, strongly punctate-striate; the interstices transversely wrinkled; posterior femora with a broad tooth.

Length 4-4 $\frac{3}{4}$ lines.

Head closely pubescent, with a central impressed longitudinal line. Labrum and jaws fulvous. Third and fourth joints of the antennæ equal; the three or four terminal ones fuscous or stained at their extremities only with that colour. Thorax longer than broad, greatly narrowed near the base; the sides near the anterior angles strongly produced into a broad callus, below the latter less swollen; surface covered with fine punctures, which are a little more closely placed and slightly confluent in the female near the anterior and posterior margin; the latter with a shallow transverse groove; rest of the surface smooth and very shining. Apex of the elytra rounded. Femora robust, the posterior ones dilated into a broad triangular tooth. Abdomen tinged with rufous.

Lake at Junsai.

I can only compare this species with *D. sulcicollis*, from North America, to which it is certainly closely allied. The thorax is, however, much more narrowed behind than in that species and the anterior callosities are much more developed; another difference is to be found in the more elongate joints of the antennæ and their comparative different length. *D. discolor*, Hoppe, may be at once distinguished from the present insect by the more opaque and confluent punctured thorax; the latter in *D. constricticollis* having a highly polished appearance.

DONACIA SERICEA, L., var. *SIBIRICA*? Solsky.

The dozen specimens obtained at Nikko show scarcely any difference from our European form; but may very well be referred to Solsky's variety according to the description given by this author. In colour the specimens vary from reddish cupreous to green or æneous like the European *D. sericea*. Structural differences I can see none.

DONACIA SIMPLEX, Fab.

Of this species Mr. Lewis obtained nine specimens at a pond at Hakodate. They also, like the preceding species, do not differ from the European form in any way whatever, and vary in size like it; *D. simplex* has also been recorded from Siberia.

Genus *SYNETA*, Eschsch.

SYNETA ADAMSI, Baly.

Of this species, of which I have the type for comparison, several specimens were obtained by Mr. Lewis which agree very nearly with the latter; but a number of others, partly from the same locality, seem at first sight certainly to represent a different species; and I have hesitated long before I came to a conclusive opinion in regard to their specific value. The very many intermediate forms, however, of which scarcely two are of the same size, sculpturing, and colour, which are before me, prove the insect to be an extremely variable one. On the same principle I am very much inclined to believe that those species described by LeConte from America, established principally on colour and more or less distinctly visible elytral costæ, may eventually prove to belong to one species only. At all events, the specimens collected by Mr. Lewis defy a satisfactory separation: in some the thorax is much more elongate than is the case in *S. adamsi*, but intermediate stages are not wanting; in others two very distinct costæ are visible, these dwindling away again to the form with one distinct lateral costa only, as described by Baly. The thorax in all of them is like that of the type, angulate at the middle, the angle itself generally 3-dentate, in some specimens the intermediate tooth being only distinct, the others obsolete. The following are the varieties with their localities:—

Var. a. Head and thorax as well as the terminal joints of the antennæ fuscous or black; elytra with a sutural and lateral broad longitudinal fuscous band. (Niohozan, Kiga, on birch.)

Var. b. Elytra and antennæ fulvous; the suture and a narrow lateral stripe fuscous; the costæ, with the exception of the fourth indistinct; rest as in *Var. a.* (Nikko, Miya, Kiga.)

Var. c. Larger, the elytra more smoothly punctured, without any costæ; testaceous, thorax stained with fuscous. (Nikaido.)

From the above localities specimens agreeing with the type in colour and structure were also obtained; between this and the above varieties some more intermediate stages in colour and sculpture are present, and it will be seen that Mr. Baly drew his descriptions from unicolorous fulvous specimens; the same author describes the thorax as transverse, with which some specimens (♀) agree; in the males the thorax is, however, much longer although agreeing in every other respect; but I have no doubt that all belong to one species. The specimens vary in size from 2-4 lines.

Genus LEMA, Fabr.

LEMA ADAMSI, Baly.

A variety of this species, obtained at Yuyama, differs from the typical form in having the elytral spots joined in shape of a longitudinal broad band which occupies nearly the entire disk, leaving only the sutural and lateral margin fulvous; the tibiæ and tarsi are also entirely black; in other respects there is no difference. I may further remark that the specimens contained in the collection of Mr. Lewis, as well as the variety described here, have the *first* joint of the antennæ fulvous only, not the two first as mentioned by Mr. Baly.

LEMA DILECTA, Baly.

All the specimens before me, obtained at Ogura Lake and Kioto, have black legs, with the exception of the base of the tibiæ, which is fulvous; in the type the legs are entirely of that colour; but I can find no other differences whatever.

Genus CRIOCERIS, Geoffr.

CRIOCERIS LEWISI, n. sp. (Plate XI. fig. 3.)

Oblong, parallel, subdepressed, black; thorax fulvous, impunctate, three spots on the disk and one at each side black; elytra fulvous, deeply punctate-striate; the interstices partially costate, the suture and a longitudinal band on each elytron black.

Length $2\frac{1}{4}$ lines.

Head deeply constricted behind the eyes, with a deep longitudinal groove between the eyes, the latter large and very prominent; orbital grooves distinct, the space between it and the eyes thinly covered with yellow pubescence as well as the lower part of the face. Antennæ more than half the length of the body, black; the three or four lower joints shining, the rest covered with close pubescence, dilated; the second to the fourth joints gradually elongate. Thorax subquadrate, moderately constricted at the middle, without a basilar groove, fulvous; three elongate spots placed triangularly on the disk and a long narrow

band at the sides black; surface impunctate, a few punctures only are placed near the sides. Scutellum black. Elytra much wider at the base than the thorax, subquadrate-oblong, the punctured striæ arranged in the following way:—a double row placed close to the sutural margin, the following space broader than that occupied by the punctures and raised in a costa near the apex; the eight following rows of punctures regularly placed, but the first and the last three of these very deeply impressed; the interspace in front of the last two rows costate; the black sutural band extends to the first row of punctures, the discoidal band occupies the space between the third and eighth rows, both bands are connected with a small triangular black spot at the apex. Underside and legs are entirely black.

Nikko. A single specimen.

CRIOCERIS ORIENTALIS, sp. nov.

Below, the lower part of the head, a spot at the vertex, antennæ, and legs black; thorax cylindrical, fulvous; elytra testaceous, distinctly punctate-striate.

Length $2\frac{1}{2}$ lines.

Head impunctate, black, sparingly covered with yellow pubescence; vertex fulvous, with an elongate blackish central spot. Antennæ half the length of the body, black, the second joint extremely short. Thorax cylindrical, scarcely constricted at the middle, with a narrow transverse groove close to the basal margin; surface remotely and very finely punctured, fulvous, the sides below black. Scutellum black. Elytra convex, of paler colour than the thorax, regularly and rather strongly punctate-striate, the punctuation getting finer towards the apex; at the shoulder a small piceous spot is visible. Underside and legs black.

Sapparo.

Of this species only a single specimen is before me, which in structure is without doubt closely allied to *C. 12-punctata* and several others, in which the thorax is nearly cylindrical. The absence of any spots at the disk of the elytra and the general colour of the present species will help to distinguish it.

Genus *PEDRILLIA*, Westw.

PEDRILLIA ANNULATA, Baly.

In all the specimens which were obtained at Nikko the black spot of the head and thorax as described by Mr. Baly is wanting, but in every other respect the insects agree.

PEDRILLIA NIGRICOLLIS, n. sp.

Black, pubescent; elytra testaceous, closely punctured.

Length 2 lines.

Head strongly punctured in front of the eyes, the intermediate space and the vertex smooth and shining; eyes deeply notched; the space in front of the clypeus deeply foveolate. Antennæ half the

length of the body, black, the third and fourth joints equal, the rest shorter, somewhat trigonately shaped. Thorax scarcely broader than long, the sides before the middle produced in a rounded prominence; another less strongly marked protuberance is placed close to the posterior margins at the sides; surface convex at the anterior portion, the latter divided by a short longitudinal groove; disk strongly but not very closely punctured and covered with rather long yellow pubescence. Elytra subdepressed anteriorly, nearly parallel, more strongly punctured than the thorax, and pubescent like the latter. Legs black, covered with yellow hairs; posterior tibiae curved.

Wada toge (August); Fukushima (July).

I am somewhat in doubt whether this species is not the normally coloured form of *T. bicolor*, Kraatz, to which at all events it is very closely allied; the differences consist in the entirely black thorax and abdomen, and perhaps in the less closely rugose-punctate head of the present species. Kraatz drew his description from a single specimen, which had the posterior margin of the thorax yellow as well as the abdomen; but as in the five specimens before me I cannot discover any trace of this colour, I must consider the species as specifically distinct. I may further add that the latter is *not* more robust or broader in shape than *P. annulata*, which is the case with *P. bicolor* according to the description, and that the legs in some specimens (probably immature) are obscure fulvous.

PEDRILLIA VARIPES, n. sp.

Below, the posterior legs, and the antennæ (the two basal joints excepted) black; above, the anterior legs, and the tarsi fulvous; elytra and thorax closely punctured, finely pubescent.

Var. Head and thorax black.

Length $1\frac{3}{4}$ line.

Head distinctly but remotely punctured, with a narrow longitudinal smooth central space; that between the antennæ with a deep transverse groove; two lower joints of the antennæ fulvous, the rest black, fourth joint distinctly longer than the third, the following joints short and somewhat triangular-shaped. Thorax nearly as long as broad, the sides produced at or immediately before the middle in a distinct angle, behind which a short but deep transverse groove is placed, only visible from below; entire surface covered with deep and rather closely placed punctures, sparingly pubescent. Elytra parallel and subcylindrical, punctured and pubescent like the thorax, but of a rather lighter fulvous or testaceous colour; the space behind the middle is very slightly depressed; the four posterior legs piceous or black; anterior ones and the tarsi fulvous.

Nikko, June; Chiuzenzi.

Smaller and less robust than *P. nigricollis*, the thorax more coarsely and more distantly punctured, and the anterior legs as well as all the tarsi fulvous. A single specimen of the variety with black head and thorax is before me, but I cannot find any other characters sufficient to separate this form as another species.

PEDRILLIA UNIFASCIATA, n. sp. (Plate XI. fig. 4.)

Black, pubescent; antennæ and legs testaceous; a spot at the anterior femora, the apex of the tibiæ, and the tarsi and the posterior femora black; thorax closely punctured with three obscure fulvous bands; elytra with the shoulders, a spot at the apex, and a transverse band near the latter fulvous.

Length $1\frac{1}{2}$ line.

Head deeply and very closely punctured, the sides of the neck, lower part of the face, and palpi testaceous; the first two joints of the antennæ stained with piceous above, the third and fourth joints of equal length. Thorax rather long, the sides strongly produced before the middle in a rounded protuberance, constricted immediately below the latter; surface closely punctured like the head and covered with rather long fulvous hairs; the sides, a longitudinal band near the latter, and a much more obscure vitta on the disk fulvous or testaceous. Scutellum thickly covered with silky yellow pubescence. Elytra convex and parallel, slightly depressed behind the middle, punctured like the thorax but the punctuation much more distantly placed; an elongate fulvous spot surrounds the shoulder, a round spot is placed close to the apex at the sides, and a transverse band of irregular shape at a little distance from the apex; the tibiæ and tarsi are also closely covered with fulvous hairs; a piceous spot is placed on the middle of the four anterior femora, the posterior ones, together with the apices of all the tibiæ and the tarsi, being entirely of that colour; the first two abdominal segments have a large fulvous spot at the sides, the rest are black.

Nikko. A single specimen.

Genus OOMORPHUS, Curtis.

OOMORPHUS JAPANUS, sp. nov.

Ovate, convex, narrowed behind, below black, above brownish æneous; thorax closely and finely punctured; elytra more strongly, closely punctate-striate.

Length 1 line.

Head very finely punctured, transversely grooved between the eyes, the middle of the front sometimes with an obsolete longitudinal groove. Antennæ black, the second joint larger and broader than the four following, the seventh transversely dilated, the eighth very short, the terminal three joints transverse, forming a club. Thorax narrowed in front, twice as broad as long, the sides but slightly rounded; surface closely, evenly, and finely punctured. Elytra distinctly narrowed behind, more strongly punctured than the thorax, the punctuation arranged alternately in stronger and finer rows of punctures, distinct to the apex. Underside black; the breast, domen, and legs more or less stained with brownish cupreous.

Oyama, Jschiuchi.

Smaller and more narrowed behind than our *O. concolor*, of a bronze not black colour, and the interstices between the larger rows of punctures less finely punctured, the larger rows also much more

closely placed. *Lamprosoma cupreatum*, Baly, is of double the size and quite differently punctured, also less narrowed behind. Nearly a dozen specimens were obtained.

LAMPROSOMA CUPREATUM, Baly.

Nearly all the specimens in this collection which I refer to Mr. Baly's species are smaller, more attenuated behind, and varying in the degree of their punctuation and colour. In the absence of other characters I have refrained from describing them as new, and believe that they only represent a local variety.

Genus CHLAMYS, Knoch.

CHLAMYS JAPONICA, n. sp. (Plate XI. fig. 5.)

Subquadrate-ovate, obscure piceous; head more or less fulvous; thorax with a posterior elevation, closely punctured and covered with fulvous tubercles; elytra strongly punctured, with a strongly raised oblique ridge from the middle of the base to the suture, and divided by other transverse irregular ridges; legs obscure fulvous.

Length $1\frac{1}{2}$ – $1\frac{3}{4}$ line.

Head closely rugose-punctate, rather flattened, light or darker fulvous. Antennæ of the same colour, the fifth and following joints transversely widened, third and fourth joints of equal length. Thorax with the middle portion gradually raised posteriorly in a moderate but distinct gibbosity, the apex of which is slightly longitudinally depressed, and the sides obliquely and rather deeply grooved or constricted; the swollen portion of the thorax, as well as the more flattened sides, are covered with irregular flavous or fulvous tuberosities, the interstices of which are closely punctured. Scutellum greatly transversely dilated posteriorly, the lateral angles acute and produced, and its posterior margin concave. Elytra slightly narrowed towards the apex, the sides rather strongly constricted at the middle; surface covered with deeper and much larger punctuation than that of the thorax; when viewed sideways the following longitudinal ridges are seen:—a narrow one from the middle of the base runs in an oblique direction towards the suture near the apex; the anterior portion of this ridge is narrow and acute to the middle, where it is intersected by a transverse ridge which runs from the shoulder to the suture; the portion of the ridge from the middle to the place where it touches the suture is broader and very strongly raised, which makes the space enclosed by it appear as being excavated; near the apex three more strongly raised tubercles placed triangularly are seen; a short transverse ridge is further visible at the sides within the constricted space; the suture itself is distinctly denticulate through its entire length. Pygidium closely punctured, with three obsolete longitudinal costæ.

Kiga, Fukushima.

The raised parts of the thorax and the elytra in this species are frequently of a flavous or fulvous colour, which sometimes is that of the entire head and thorax. The species is closely allied to *C.*

spilota, Baly, but differs in its less elongate and more square shape and in the differently sculptured elytra; the latter show immediately below the middle, near the suture, an apparently deeply excavated space, caused partly by the strongly raised principal ridge, which limits this space laterally: the *anterior* portion of the elytra within the ridge only shows a few very small tubercles near the suture; in *C. spilota* there is a distinct tubercle in the corresponding portion; the elevate ridges are but slightly raised and the excavated space below the middle is wanting.

CHLAMYS SPILOTA, Baly.

Of this species, a variety obtained at Miyanoshito is of nearly entirely fulvous colour, the thorax being transversely spotted with black. *C. spilota* may be separated from other allied forms principally by the gibbous or posteriorly elevated shape of the thorax; this elevation or bump is somewhat conically shaped and is *not* divided at the middle by a longitudinal channel, so frequently the case in other species, although the *apex* of the tuberosity is faintly sulcate. Another normally coloured specimen of this species was obtained at Nakone.

Genus CRYPTOCEPHALUS, Geoffr.

CRYPTOCEPHALUS LIMBATIPENNIS, n. sp.

Black: clypeus, anterior and lateral margin of the thorax and two basal spots of the latter yellow; basal joints of antennæ and the legs fulvous; thorax rugose-punctate at the sides; elytra strongly punctate-striate, black, the lateral margins narrowly flavous.

Length $1\frac{1}{2}$ line.

Head closely and distinctly punctured, black; the clypeus, labrum, and part of the sides below the eyes flavous; antennæ black, the five basal joints fulvous, fourth joint slightly longer than the third. Thorax about twice as broad as long, the sides nearly straight, produced in a point at the posterior angles; surface closely covered with distinct and somewhat elongate punctures, confluent and forming elongate and deep strigæ at the sides, the anterior and lateral margins narrow, yellow, the former with a slight indentation at the middle, which intrudes into the black-coloured portion; at the base, immediately above the scutellum, two closely approached fulvous spots are placed. Scutellum elongate, raised behind. Elytra with regular rows of deep and not very closely approached punctures, which get less deep below the middle but are distinct to the apex, the latter of which is covered closely with other fine punctures; interspaces at the sides below the shoulder here and there somewhat transversely wrinkled; humeral callus very prominent, the extreme base impunctate; the colour of the disk entirely black, the lateral margin narrowly flavous, this colour is slightly widened at a place near and below the middle. Pygidium black, margined with yellow. Legs entirely fulvous.

Shimonosuwa (Suwa Lake).

There is only a single specimen of this species before me, which seems to be closely allied to *C. limbellus*, Mannerh., or rather to its black variety, which is almost identical in its coloration; but the sculpture of the thorax in *C. limbatipennis* is quite distinct from the allied and other similarly coloured species, forming elongate confluent rugosities at the sides, which will prevent the insect being mistaken for any of the allied forms.

CRYPTOCEPHALUS PARTITUS, n. sp. (Plate XI. fig. 8.)

Cylindrical, convex; black; base of antennæ and the legs fulvous; anterior and lateral margins of the thorax and two spots at the base yellow; surface finely strigose; elytra regularly punctate-striate, yellow, a sutural and discoidal longitudinal band black.

Length 1 line.

Head flat, yellow, the extreme base and a short longitudinal central band, connected with the latter, black; antennæ nearly as long as the body, the five lower joints fulvous, the rest black, third and fourth joints equal. Thorax rather transverse, the sides very little rounded; surface entirely covered with very fine confluent longitudinal strigæ, black; the anterior and lateral margins (the former slightly widened at the middle), and two large, closely-approached transverse spots, placed at the middle of the base, yellow. Scutellum black. Elytra strongly and regularly punctate-striate, the interior of the spots black, the sutural band widened at the base and connected at its end with the broader discoidal band in some specimens, but in others isolated; the latter commences at the shoulder, where it is rather narrow, and after widening slightly immediately below the base, continues straight towards the apex, where it is interrupted at some distance from the latter; the same band extends generally in width from the fifth to the ninth row of punctures, the rest of the disk of the elytra and their apices being bright yellow. Legs robust, fulvous. Underside black.

Wada toge.

From all other nearly similarly coloured species (*C. boehmi*, *limbellus*, *lateralis*) the present may be at once distinguished by the sculpture of the thorax, the close striæ of which give the latter a silky appearance, punctuation being altogether absent. In one of the specimens the yellow spots of the thorax are very small, and the two black elytral bands are almost connected anteriorly by an indistinct transverse piceous stain.

CRYPTOCEPHALUS NIGROFASCIATUS, n. sp.

♂. Below black; apex of the abdomen, legs, and base of the antennæ flavous; above testaceous; thorax distinctly punctured; elytra strongly punctate-striate, each elytron with a longitudinal black band, abbreviated behind.

♀. Larger, entirely flavous or pale fulvous.

Var. a. The elytral band very obsolete, sometimes entirely absent.

Var. b. Elytra black, the sutural and lateral margin flavous.

Length $1-1\frac{1}{2}$ line.

Head with a more or less distinct central longitudinal groove, flavous, rather sparingly impressed with deep irregular punctures; antennæ slender, the joints elongate, third and fourth of equal length, the five lower ones testaceous, the rest black. Thorax slightly narrowed in front, the sides nearly straight, the posterior angles produced backwards in an acute point; posterior margin finely serrate, narrowly black; rest of the surface fulvous, rather closely and distinctly punctate, the punctures at the sides of oblong shape, and more closely approached. Scutellum slightly raised behind, testaceous, margined with black. Elytra cylindrical, each elytron with ten rows of deep punctures (the first very short), the fourth and fifth and the seventh and eighth rows united at their ends and abbreviated before the apex; the interstices at the sides slightly convex. Legs entirely fulvous. Underside black, the last abdominal segment testaceous; prosternum very broad.

Nowata, Matsuida, Fukin, road to Oyama, Wady toge.

Several nearly similarly coloured species of *Cryptocephalus* have been described, of which *C. bilineatus*, Fabr., *C. tessellatus*, Germ., and *C. convexus*, Illig., seem to be the most closely allied forms. There are, however, sufficient differences to be found in *C. nigro-fasciatus* to look upon it as a distinct species, which may be separated from either of the above by the unspotted and distinctly punctured thorax, the punctures of which are distinctly elongate at the sides, and by the colour of the elytra, which have only the black band placed on the disk, the suture and lateral margin remaining of the ground-colour; this dark band is of very variable width, occupying in some specimens nearly the entire disk, while in others it is absent. These latter specimens resemble much in general appearance *C. minutus* and allied species, but may be at once distinguished by the distinctly punctured thorax. Fourteen specimens of *C. nigrofasciatus* were obtained at the above-mentioned localities.

CRYPTOCEPHALUS DIFFORMIS, n. sp. (Plate XI. fig. 6.)

Below piceous, above black; lateral margin of the thorax and elytra, as well as their apices, more or less flavous; thorax extremely closely punctured; elytra more strongly semipunctate-striate; legs yellow, the anterior tibiæ compressed and dilated.

Length $1\frac{3}{4}$ line.

Head finely and rather closely punctured, flattened; clypeus and the labrum flavous. Antennæ two thirds the length of the body, black, the four lower joints flavous or fulvous, third and fourth equal, the six terminal joints slightly flattened. Thorax transverse, greatly widened posteriorly, the sides with a rounded and flattened margin; surface extremely closely and rather finely punctured throughout, black, the extreme lateral, and sometimes also the anterior margin, flavous. Scutellum flat, broadly ovate. Elytra as broad as the thorax at the base, not widened behind, much more strongly, distantly, and rather regularly punctured, the punctures

arranged in rather close rows, the interspaces somewhat transversely wrinkled. Legs robust and rather short, the anterior tibiæ much flattened and dilated, their inner margin broadly rounded. Abdomen more or less testaceous, rest of the underside piceous.

Nikko.

The three specimens obtained by Mr. Lewis are all males, and scarcely differ from each other. In one the anterior margin of the thorax is very narrowly flavous, and two obscure small spots of the same colour are visible on the elytra immediately below the scutellum, indicating doubtless that the general colour of the upper surface is liable to variation, so that probably individuals may exist in which the yellow colour predominates, as is the case in the closely allied *C. pini* of Europe. This latter species has the same curious dilatation of the anterior tibiæ, but is, I think, a distinct, although closely allied, species. The thorax in the present insect is longer, less transverse, more widened behind, the surface still more closely and finely punctured, and the entire coloration quite different from *C. pini*, but the same in the three specimens before me except in regard to the slight variation mentioned above; the lateral margin (narrowly) and the apex of the elytra (broadly) are flavous in all of them.

CRYPTOCEPHALUS LIOTHORAX, Solsky.

Var. SIGNATICEPS, Baly. *C. multiplex*? Suffr.

According to Dr. Kraatz these two forms must be looked upon as representing the same species. I believe, however, that the synonyms of this and several allied species are not at all clear and settled. Solsky, for example, makes no mention of the distinct white spot at the apex of the femora, visible in the type described by Mr. Baly before me, and in all the other Japanese specimens I have for comparison. Amongst these there is a variety (differing in no other way but that of colour) which agrees perfectly with one described by Suffrian as *C. multiplex* from India, which I am inclined to look upon as identical with the present species, since I cannot find any characters by which it may be distinguished. Curiously enough Suffrian, in spite of the particular and lengthened descriptions of all his species, makes no mention of the sculpture of the thorax in *C. multiplex*. Besides these named species, there are several others, very closely allied, *C. transversalis*, Suffr., *C. luridipennis*, which may prove eventually to be but varieties of *C. liothorax*, which is evidently an extremely variable species. At all events, I have little doubt about the identity of *C. multiplex* and the present insect. Another apparently very closely allied species is *C. tetrathyris*, Solsky, which agrees again very nearly with *C. multiplex* and with some varieties obtained by Mr. Lewis, except that the anterior legs in Solsky's species are described as testaceous. In the Japanese variety the elytra are black, with the exception of the lateral margin anteriorly, and connected with a rufous transverse band; another similarly coloured round spot is placed at the apex; all this and the rest agreeing with the description of *C. multiplex*.

CRYPTOCEPHALUS SEXPUNCTATUS, Linn.

A single specimen before me I am unable to separate from the normally coloured individuals of this species, which has been reported also from Siberia.

CRYPTOCEPHALUS FULCRATUS, Germ.

The occurrence of this species in Japan extends still further its geographical distribution, it having been also recorded, like the preceding species, from Siberia. Two specimens obtained at Jensaï do not differ from the European form except in their rather larger size.

CRYPTOCEPHALUS NOBILIS, Kraatz. (Plate XI. fig. 7.)

The description of this species, given by the author in the 'Deutsche ent. Zeitschr.' 1879, agrees perfectly with the ten specimens obtained by Mr. Lewis at Kiga, Suyama, and Subashiri. The insect is of a shining black colour, with two transversely shaped yellow spots at each elytron (one slightly before the middle, the other at the apex). The antennæ in the male are exactly as long as the body, but shorter in the female, and the four or five lower joints are testaceous; the punctuation of the elytra is strong, and arranged in close but not very regular rows. The specimens which served Mr. Kraatz for his description were obtained from the Amur country.

Genus PACHYBRACHYS, Suffr.**PACHYBRACHYS ERUDITA, Baly.***Pachybrachys dõnitzi*?, Harold.

A great many specimens of this apparently very variable species were obtained at Tensai, Wada toge, Nikko, Kurigahara, on sallow. The specimens which served Mr. Baly for his type have the elytra almost spotless; between this and almost black-coloured individuals there is every intermediate degree before me, the most frequent form being that in which the disk of the elytra is occupied by a longitudinal broad piceous or black band, leaving only the sutural and lateral margin of the testaceous ground-colour; the thorax varies equally in colour, from a well-distinguished M-shaped mark to being almost black with two narrow yellow basal spots. I have no doubt that one of these named varieties is identical with *P. dõnitzi*, Harold, as all other characters agree with the description of this author.

Genus LEPROTES, Baly.**LEPROTES PULVERULENTUS, n. sp. (Plate XI. fig. 9.)**

Oblong, black, covered with white excrescences; three basal joints of the antennæ and the labrum fulvous. Head and thorax finely rugose-punctate; elytra more strongly semipunctate-striate.

Length 3-3½ lines.

Head with an obsolete median longitudinal groove, closely and finely rugose-punctate. Antennæ two thirds the length of the body, slender and filiform, the second joint distinctly shorter than the first, the third more than twice as long as the preceding, basal joint stained with piceous above, the two or three following fulvous, the rest dark piceous or black. Thorax subcylindrical, scarcely broader than long, the lateral margin entirely absent; surface sculptured like the head, obsoletely transversely depressed across the base. Elytra more strongly punctured, the punctuation arranged in very closely approached rows, the interspaces here and there obsoletely raised, surface covered with a thick layer of white powder, when rubbed shining black. Legs black, extreme apex of the tibiæ and the tarsi obscure fulvous. Femora armed with a smooth tooth.

Oyama, Kiga, Oguma, Nikko.

In size this species agrees with *L. lewisi*, Baly, and *L. fulvus*, Baly, but is quite distinct from either of them. The general colour is entirely black; and the insect, when captured, is covered with a thick layer of white powdery matter which entirely hides the punctuation from view; when rubbed, the elytra, unlike *L. lewisi*, are shining black and not covered with pubescence. In the latter species there is a finely but distinctly marked lateral margin to the thorax, which in the present insect is totally absent; the punctuation of the head and thorax also is much more finely rugose, the antennæ are proportionately longer and have the three or four lower joints fulvous.

Genus DEMOTINA, Baly.

DEMOTINA BIPUNCTATA, sp. nov.

Narrowly oblong, obscure fulvo-piceous, closely covered with white pubescence; antennæ and legs fulvous; head, the sides of the thorax and elytra, and a small spot at the middle of each elytron, whitish.

Length $1\frac{1}{2}$ line.

This species, although closely allied to *D. modesta*, Baly, is yet quite distinct. The antennæ are less robust, the thorax is rather more transverse, the pubescence which covers the entire upper surface is not fuscous as in the allied species, but white, covering the entire head thickly, and forming a band at the lateral and anterior margin of the thorax as well as at the sides of the elytra, while a small spot of white hairs is placed near the middle of each elytron; the punctuation of the latter as far as visible seems to be arranged in very closely approached rows. The intermediate tibiæ are obsoletely notched at their apex; claws bifid; femora with a minute tooth.

Kobe.

A single specimen was obtained by Mr. Lewis during his first journey, a second one at the last visit to Japan. The species is closely allied to *D. modesta*, Baly; but is of smaller and less robust size, and distinguished by the white pubescence in forms of stripes and spots on the elytra. *D. decorata*, Baly, is smaller still, of different coloration and with comparatively short antennæ.

Genus *NODOSTOMA*, Motsch.*NODOSTOMA JAPONICUM*, sp. nov.

Black ; head and four basal joints of the antennæ fulvous ; head and thorax closely and strongly punctured ; elytra with the base swollen, distinctly punctate-striate.

Length 2 lines.

Head entirely fulvous, closely and very strongly punctured, the middle impressed with a short longitudinal groove ; epistome broader than long, separated from the face by an irregular transverse groove. Terminal joints of the antennæ slightly and gradually thickened, the four lower joints fulvous, the rest black ; second and third joints of nearly equal length. Thorax about twice as broad as long, the sides angulate immediately below the middle ; surface closely covered with deep and round punctures, which at the middle of the disk are now and then confluent. Scutellum impunctate. Elytra with the base strongly swollen, deeply depressed below the latter and within the humeral callus, from which a short costa runs obliquely towards the lateral margin ; the punctuation is strong within the basilar depression, more finely impressed and very regular at the rest of the surface ; the suture is accompanied by two rows of punctures, the latter near the other portion of the apex is very fine. Femora with a small tooth, the knees sometimes as well as the base of the tibiæ dark fulvous.

Kisa.

I cannot find amongst the many eastern forms contained in this genus a species of similar coloration, which is the same in the two specimens I have for examination. All the femora are armed with a small tooth, and the thorax is angulate directly below the middle and not close to the base, as is the case in many other species of *Nodostoma*. The claws are appendiculate as usual. The two specimens before me are evidently females.

NODOSTOMA RUFICOLLE, sp. nov. (Plate XI. fig. 10.)

Underside, legs, terminal joints of the antennæ, and elytra black ; head and thorax rufous, strongly punctured ; elytra with the base swollen, punctate-striate.

Length 2 lines.

Head strongly rugose-punctate, the epistome separated from the front only by some smooth raised longitudinal spaces. The four basal joints of the antennæ fulvous, the rest black, fourth joint slightly longer than the third. Thorax narrowly transverse, the sides obsolete angulate near the base, its surface rather convex, rufous like the head, remotely and strongly punctured. Elytra with a distinct depression within the shoulder and below the base, the latter strongly raised and with but few punctures, the latter more crowded and deeply impressed within the depression ; rest of the surface more finely and remotely punctate-striate. Intermediate and posterior femora with a minute tooth.

Nikko, Fukushima.

The dozen specimens obtained at the above locality do not seem

to vary except slightly in size. The species has the same coloration as *N. davidi*, Lefèvre, from China, but differs in the strong punctuation of the thorax. In *N. balyi*, Har., the punctuation of the latter is much more closely placed, and the shape of the insect is quite different as well as its colour.

NODOSTOMA MODESTUM, sp. nov.

Ovate, subquadrate, convex, entirely metallic dark blue; the second and third joints of the antennæ fulvous; thorax finely and remotely punctured; elytra depressed below the base, finely punctate-striate.

Length 2 lines.

Head irregularly but rather deeply punctured, especially anteriorly, the epistome not separated from the face. Antennæ rather more than half the length of the body, the basal joint metallic blue above, the following two fulvous, the rest black, the second joint of curved shape, nearly as long as the third. Thorax not more than twice as broad as long, the sides with a distinct tooth near the middle; surface with a rather deep transverse fovea at each side, distantly but deeply punctured, the punctures more deeply impressed at the sides than at the disk. Scutellum black, impunctate. Elytra with a deep transverse depression below the base and another longitudinal one within the shoulders, finely and regularly punctate-striate at the inner disk, more strongly and closely near the sides; within the basal depression a few transverse wrinkles are visible. Underside and legs entirely dark blue; all the femora armed with a minute tooth. Tarsi black.

Yuyama, Hitoyoschi. (12 specimens.)

It is impossible to say whether one of Motschulsky's short and insufficient descriptions is meant for the present species, which is of the same size as *N. balyi*, but differently sculptured and of a uniform violaceous blue colour. The small tooth at the sides of the thorax is placed nearer the middle than is often the case in other species of this genus.

Genus *CHRYSOMELA*, Linn.

CHRYSOMELA CYRTONOIDES, sp. nov.

Ovate, very convex, widened behind, brownish æneous; thorax distantly punctured; elytra rather closely punctate-striate, the interstices smooth and impunctate.

Length 2-2½ lines.

Head convex at the vertex, entirely impunctate; epistome separated from the face by a deep arcuate groove. Antennæ half the length of the body, rather robust, the first joint broadly dilated, the third joint not more than one half longer than the preceding, the rest gradually thickened, black, the basal joints tinged with æneous. Thorax very convex, the sides rather strongly deflexed, the lateral margin but slightly rounded, angles not pointed but distinct; surface very remotely punctured, the sides not thickened. Scutellum

distinctly broader than long, impunctate. Elytra slightly wider at the base than the thorax, widened towards the middle and very convex, the apex more pointed, no humeral callus; their surface covered with closely approached rows of distinct punctures, the latter placed rather irregularly on the striae and near the suture slightly approached in pairs and distinct to the apex; the sutural margin near the apex is accompanied by an impressed line. Prosternum broad, rugose-punctate.

Konose.

The shape of the thorax and elytra in this species resembles greatly that of the genus *Cyrtonus*, with which the present insect cannot be confounded on account of the presence of wings. *C. templetoni*, Baly, is of somewhat similar shape, but differs in every other particular. The plain and not thickened nor impressed sides of the thorax in *C. cyrtonooides* is another peculiarity of this species.

CHRYSOMELA NIKKOENSIS, sp. nov.

Ovate, subparallel, moderately convex, black or dark blue, shining; thorax extremely finely punctured, laterally with a longitudinal basal groove; elytra subgeminata, punctate-striate, the interstices very finely punctured.

Length 3 lines.

Head entirely impunctate, flattened. Antennæ rather less than half the length of the body, the first six joints slender and shining, the rest gradually dilated and opaque, black. Thorax about twice as broad as long, slightly narrowed in front, the anterior angles acute and somewhat produced; the disk with a few very minute punctures, only visible with a strong lens, the lateral margin bounded within anteriorly by a few stronger punctures, posteriorly by a short but deep longitudinal groove, not extending upwards to the middle. Scutellum broadly ovate. Elytra not widened behind, subquadrate, each elytron with ten distinct and regular rows of punctures, the first very short, the others arranged in pairs, the interstices also very finely punctured.

Nikko, Yunoshiku, Urasa.

It is not without some doubt that I describe this species as new, as several very closely allied forms occur in Northern Europe (*C. ordinata*, Gebl., *C. ambulans*, Fald., *C. geminata*, Payk.); but the species from Japan seems to differ from all by the shining and almost impunctate disk of the thorax, on which fine punctures are only visible with a strong lens. The interstices between the double rows of punctures at the elytra are finely but distinctly punctured, the double rows themselves consist of strong and regular lines of punctures not very closely approached in pairs.

CHRYSOMELA GEMINATA?, Payk.

A single specimen obtained at Hakodate I must refer to this species, although the colour of the upper surface, instead of the general dark blue peculiar to *C. geminata*, is here obscure æneous with a slight violet tint. The thorax in the specimen before me is

very finely and closely punctured, except near the lateral margin, where stronger punctures are placed anteriorly, while a short but deep groove limits the posterior portion. The punctuation of the elytra consists of four stronger double rows of punctures; the interstices are everywhere closely, irregularly, and finely punctured. The antennæ are entirely black; the third joint is only one half longer than the preceding.

It is possible that the Japanese specimen represents a closely allied but distinct form.

CHRYSOMELA OBSCUROFASCIATA, sp. nov. (Plate XI. fig. 11.)

Oblong, convex, subcylindrical, dark violaceous blue or green above, below fuscous violaceous; thorax closely punctured, the sides thickened, foveolate; elytra closely and irregularly punctured, the interstices rugose, violaceous blue, the sides with a broad obscure purplish band.

Length $5-6\frac{1}{2}$ lines.

Head not very strongly punctured at the vertex and at the sides, the middle of the front nearly impunctate. Antennæ slender, nearly half the length of the body, the six lower joints metallic blue, the rest black. Thorax transversely convex, the anterior margin slightly concave, posterior one broadly rounded, the sides slightly rounded in front, nearly straight at the base, the lateral margin much thickened through its entire length, deeply foveolate-punctate within, rest of the surface closely and more finely punctured. Scutellum impunctate. Elytra very convex and subcylindrical, scarcely widened behind; the entire disk covered with strongly impressed and closely placed punctures, which near the suture are generally divided by longitudinal smooth interspaces, the latter at the other parts of the surface being transversely rugose; below the shoulders is a slightly depressed space, where the punctuation is much coarser, but towards the apex it becomes very fine and close; a single row of deep punctures accompanies the extreme lateral margin; the space immediately in front of the latter is, however, generally smooth and impunctate. An obscure dark broad purplish band extends from the shoulder to the apex, narrowed at the latter place. Underside and legs more or less tinged with fulvous, otherwise violaceous blue. Prosternum deeply longitudinally sulcate.

Nügata.

More than 30 specimens of this fine and large species, obtained at one locality only, are before me. The colour of the upper side varies from green to blue and dark violaceous, the purplish band being sometimes very obscure; the punctuation of the elytra varies also rather much, being in some specimens much more closely placed than in others, and in a single specimen the punctures are much deeper and larger, the inner disk near the suture being almost devoid of punctures; in most instances, however, the punctuation is very close indeed and for the most part irregularly placed. The maxillary palpi have their apical joint broadly truncate and of very nearly the same length and width as the penultimate.

This species evidently represents the subsection of the European genus *Oreina* in Japan, and is I think closely allied to *C. speciosa*, Fabr., or one of its numerous varieties, but is, I have no doubt, distinct from that or any other species of this most difficult group. According to Mr. Baly, *C. speciosa* has the deep thoracic lateral groove broadly interrupted at its middle; in the present insect this groove is very deep and extends upwards to more than two thirds the length of the thorax, being interrupted only close to the anterior margin. In this as well as in coloration all the 30 specimens before me agree; but the punctuation, as already remarked, of the upper surface is extremely variable, but much more strongly and rugose than in any of the European species with which I am acquainted.

Genus PHYTODECTA.

PHYTODECTA ROBUSTA, sp. nov.

Broadly ovate, subquadrate, fulvous; thorax sparingly punctured at the sides only; scutellum black; elytra strongly punctate-striate, the interstices finely punctured, fulvous; two elongate spots at the base and two behind the middle, sometimes connected, black.

Length 3 lines.

Head finely and distantly punctured. Antennæ very short, not extending to the base of the thorax, entirely fulvous, the last five joints transversely dilated. Thorax transversely convex, the sides nearly straight, the basal margin broadly rounded at the middle; disk very distantly and finely punctured, the sides impressed with a few strong and more closely placed punctures. Scutellum black. Elytra convex, not broader at the base than the thorax, each elytron with ten rows of deep punctures, visible to the apex, the interstices finely but closely punctured; each elytron with an elongate subtriangular spot at the shoulder, another more rounded one at the base near the scutellum, a third, generally elongate and of triangular shape, at the sides below the middle and connected with a fourth shorter spot near the suture, this latter spot sometimes isolated; another very small sutural spot is placed at the apical angle. Underside and legs entirely fulvous, the abdominal segments strongly punctured. Tibiæ short, and broadly dilated at the outer side.

Miyanoshta, Hiogo (also coll. *Jacoby*).

This species is of a much more convex and robust shape than most of our European forms, from which and others it may be further distinguished by the nearly impunctate or sparingly punctured thorax, the entirely fulvous and short antennæ, and the different shape of the elytral spots, the outer ones of which are very elongate, the inner ones of more rounded shape. The tibiæ are also very short and more dilated than usual, and the broad base of the elytra gives the insect a general square-shaped appearance. A single specimen is contained in my own, two others in the collection of Mr. Lewis.